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Subject: Draft Homework Questions

Create a table of major components and identify:

- Items that are “copies” of other BNL/LANL systems and procurement can be initiated near-term.
- Items that require development and identify target for initiation of procurement.

“Crash” the schedule to two years and see what activities become problematic.

System/Component	Copy of other systems?	Development required?	Target for initiation of procurement	Notes
Raster magnet	No	Yes	7/2014.	Mechanical design work required. Magnets of similar complexity have previously been designed in-house.
Raster power supply	No	Yes	7/2014 (low level PLC and other components can be procured near-term)	Off-the-shelf power supplies are being researched, but some level of customization is likely.
General vacuum components and collimator	Mostly standard components	some	5/2014 (procurement of some items may occur sooner)	Mechanical design work required
Plunging multiwire	Yes	some	Near-term	Systems integration and software development reqd.
Current transformer	Yes	some	Near-term	Systems integration and software development reqd.
Beam Interlock System	No	Yes	10/2014	Design concepts are based on proven technologies, but custom design will likely be required. Some off-the-shelf items may be used.

Laser profile monitor	Similar, but not copy	Yes	7/2014 (some components can be procured near-term)	Similar to previously designed LPM for BNL Linac, but several differences exist – vacuum crosspiece, laser, etc.
Beam position monitor electrode assembly	No	Yes	7/2014	Mechanical design work required. Design is based on the C-A booster BPM, but size and packaging is different.
Beam position monitor electronics	No	Yes	10/2014 (but procurement of some components can begin near-term)	Electronic PC board designs required. Electronics are based on RHIC prototype but different analog hardware design is required. PC board designs expected to be complete around 10/2014.